

## CLAIMS

1. A shaft sealing assembly with a pumping device for sealing a fluid at a space between a housing and a rotatable shaft, comprising:

a sealing means comprising;

5 a seal ring unit, coaxially surrounding said shaft within said housing and arranged for movement axially relative to said shaft under a resilient pressure;

10 a counter ring unit, coaxially surrounding said shaft within said housing and prevented from axial movement relative to said shaft when in operating position;

15 each of said ring units having an end face for mutual engagement under said resilient pressure to form a seal, one of said ring units being mounted for rotation with said shaft at least one of said end faces having a surface profile to act on a sealed fluid between said end faces; and

a pumping means, positioned concentrically with said shaft and within said housing and positioned between said space and said sealing means for vaporizing of a liquid portion of said fluid.

2. A sealing assembly according to claim 1 where said pumping means comprises a threaded internal cylindrical surface of a member and is mounted concentrically within said housing.

3. A sealing assembly according to claim 1 where said pumping means comprises a threaded external cylindrical surface of a member mounted for rotation with said shaft.

4. A sealing assembly according to claim 2 where said pumping means comprises a threaded external cylindrical surface of a member mounted for rotation with said shaft.

5. A sealing assembly according to claim 1 where said surface profile on one of said end faces is a plurality of helical grooves.

6. A sealing assembly according to claim 1 where said

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Parameter	Value	Unit
1. $\alpha$	0.001	
2. $\beta$	0.001	
3. $\gamma$	0.001	
4. $\delta$	0.001	
5. $\epsilon$	0.001	
6. $\zeta$	0.001	
7. $\eta$	0.001	
8. $\theta$	0.001	
9. $\iota$	0.001	
10. $\kappa$	0.001	
11. $\lambda$	0.001	
12. $\mu$	0.001	
13. $\nu$	0.001	
14. $\xi$	0.001	
15. $\omicron$	0.001	
16. $\pi$	0.001	
17. $\rho$	0.001	
18. $\sigma$	0.001	
19. $\tau$	0.001	
20. $\upsilon$	0.001	
21. $\phi$	0.001	
22. $\chi$	0.001	
23. $\psi$	0.001	
24. $\omega$	0.001	
25. $\kappa$	0.001	
26. $\lambda$	0.001	
27. $\mu$	0.001	
28. $\nu$	0.001	
29. $\xi$	0.001	
30. $\omicron$	0.001	
31. $\pi$	0.001	
32. $\rho$	0.001	
33. $\sigma$	0.001	
34. $\tau$	0.001	
35. $\upsilon$	0.001	
36. $\phi$	0.001	
37. $\chi$	0.001	
38. $\psi$	0.001	
39. $\omega$	0.001	
40. $\kappa$	0.001	
41. $\lambda$	0.001	
42. $\mu$	0.001	
43. $\nu$	0.001	
44. $\xi$	0.001	
45. $\omicron$	0.001	
46. $\pi$	0.001	
47. $\rho$	0.001	
48. $\sigma$	0.001	
49. $\tau$	0.001	
50. $\upsilon$	0.001	
51. $\phi$	0.001	
52. $\chi$	0.001	
53. $\psi$	0.001	
54. $\omega$	0.001	
55. $\kappa$	0.001	
56. $\lambda$	0.001	
57. $\mu$	0.001	
58. $\nu$	0.001	
59. $\xi$	0.001	
60. $\omicron$	0.001	
61. $\pi$	0.001	
62. $\rho$	0.001	
63. $\sigma$	0.001	
64. $\tau$	0.001	
65. $\upsilon$	0.001	
66. $\phi$	0.001	
67. $\chi$	0.001	
68. $\psi$	0.001	
69. $\omega$	0.001	
70. $\kappa$	0.001	
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77. $\rho$	0.001	
78. $\sigma$	0.001	
79. $\tau$	0.001	
80. $\upsilon$	0.001	
81. $\phi$	0.001	
82. $\chi$	0.001	
83. $\psi$	0.001	
84. $\omega$	0.001	
85. $\kappa$	0.001	
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89. $\xi$	0.001	
90. $\omicron$	0.001	
91. $\pi$	0.001	
92. $\rho$	0.001	
93. $\sigma$	0.001	
94. $\tau$	0.001	
95. $\upsilon$	0.001	
96. $\phi$	0.001	
97. $\chi$	0.001	
98. $\psi$	0.001	
99. $\omega$	0.001	
100. $\kappa$	0.001	